

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of the claims in this application:

Claim 1. (Currently Amended) An audio signal processing method that performs virtual acoustic image localization processing of audio signals based on at least one type of information among position information, movement information, and localization information, the method comprising the steps of:

when there are a plurality of changes in said information within a prescribed unit of time, generating a single information change at the end of said prescribed unit of time based on said plurality of ~~information~~ changes in said information; and

performing virtual acoustic image localization processing for said audio signals based on said generated single information change.

Claim 2. (Currently Amended) The audio signal processing method according to Claim 1, wherein

the step of generating said single information change is performed using only said information presented last within said prescribed unit of time ~~unit~~.

Claim 3. (Currently Amended) The audio signal processing method according to Claim 1, wherein

the step of generating said single information change is performed using only said information presented first within said prescribed unit of time ~~unit~~.

Claim 4. (Currently Amended) The audio signal processing method according to Claim 1, wherein

the step of generating said single information change is performed using a result of one of addition and averaging of said plurality of information within said prescribed unit of time ~~unit~~.

Claim 5. (Currently Amended) The audio signal processing method according to Claim 1, wherein

the step of generating said single information change is performed by estimation, based on said plurality of information within said prescribed unit of time ~~unit~~.

Claim 6. (Currently Amended) The audio signal processing method according to Claim 1, wherein

the step of generating said single information change is performed only for those information elements within said plurality of information elements in which the changes have exceeded a

prescribed threshold within said prescribed unit of time ~~unit~~.

Claim 7. (Currently Amended) The audio signal processing method according to Claim 1, further comprising  
imparting random fluctuations to said generated single information change.

Claim 8. (Original) The audio signal processing method according to Claim 1, wherein  
said audio signals are digital signals, and said prescribed unit of time ~~unit~~ is an integral multiple of the sampling period of said ~~audio~~ digital signals.

Claim 9 (Original) The audio signal processing method according to Claim 1, wherein  
said prescribed unit of time ~~unit~~ is of variable length.

Claim 10. (Currently Amended) The audio signal processing method according to Claim 1, wherein  
when there is no change in said information within said prescribed unit of time ~~unit~~, performing said virtual acoustic image localization processing based on said single information change applied to the immediately preceding prescribed unit of time

~~unit.~~

Claim 11. (Currently Amended) The audio signal processing method according to Claim 1, wherein

when there is no change in said information within said prescribed unit of time ~~unit~~, said information change applied to said single virtual acoustic image localization processing is not transmitted.

Claim 12. (Original) The audio signal processing method according to Claim 1, wherein

said information for said audio signals can be modified according to user operations.

Claim 13. (Currently Amended) An audio signal processing method that performs virtual acoustic image localization processing for audio signals having at least one type of information among position information, movement information and localization information, associated with time information and/or event information, based on said information, the method comprising the steps of:

when a plurality of said information elements are contained

within a prescribed unit of time unit, ~~generates~~ generating a single information change at the end of said prescribed unit of time based on said plurality of said information elements; and performing virtual acoustic image localization processing for said audio signals based on this generated single information change.

Claim 14. (Currently Amended) The audio signal processing method according to Claim 13, wherein

said step of generating a single information change is performed using only a last one of said plurality of said information elements presented within said prescribed unit of time unit.

Claim 15. (Currently Amended) The audio signal processing method according to Claim 13, wherein

said step of generating a single information change is performed using only a first one of said plurality of said information elements presented within said prescribed unit of time unit.

Claim 16. (Currently Amended) The audio signal processing method according to Claim 13, wherein

said step of generating a single information change is performed by one of adding and averaging said plurality of said information elements within said prescribed unit of time ~~unit~~.

Claim 17. (Currently Amended) The audio signal processing method according to Claim 13, wherein

said step of generating a single information change is performed by estimation based on said plurality of said information elements within said prescribed unit of time ~~unit~~.

Claim 18. (Currently Amended) The audio signal processing method according to Claim 13, wherein

said step of generating a single information change is performed only for those information elements in said plurality of said information elements within said prescribed unit of time ~~unit~~ in which the change exceeds a prescribed threshold.

Claim 19. (Currently Amended) The audio signal processing method according to Claim 13, further comprising a step of imparting random fluctuations to said generated single information change.

Claim 20. (Currently Amended) The audio signal processing method according to Claim 13, wherein

said audio signals are digital signals, and said prescribed unit of time unit is an integral multiple of ~~the~~ a sampling period of said ~~audio~~ digital signals.

Claim 21. (Currently Amended) 21. The audio signal processing method according to Claim 13, wherein

said prescribed unit of time ~~unit~~ is of variable length.

Claim 22. (Currently Amended) The audio signal processing method according to Claim 13, wherein

when there is no change in said information within said prescribed unit of time ~~unit~~, said step of performing virtual acoustic image localization processing is performed based on said information change applied to the immediately preceding prescribed unit of time ~~unit~~.

Claim 23. The audio signal processing method according to Claim 13, wherein

when there is no change in said information within said prescribed unit of time ~~unit~~, said information change applied to

said virtual acoustic image localization processing is not transmitted.

Claim 24. (Original) The audio signal processing method according to Claim 13, wherein

said information possessed by said audio signals can be modified according to user operations.

Claim 25. (Currently Amended) An audio signal processing method in which, when a plurality of information changes of at least one information type among position information, movement information, and localization information are applied to audio signals within a prescribed unit of time ~~unit~~, the method comprising the steps of:

generating a single information change at the end of said prescribed unit of time based on ~~this~~ said plurality of information changes;

performing virtual acoustic image localization processing in advance on said audio signals based on a plurality of localization positions of the audio signals and producing a plurality of synthesized audio signals;

and based on the generated single information change, reading out from storage means, in which are stored a the plurality of



synthesized audio signals obtained from the localization processing, at least one of said synthesized audio signals.

Claim 26. (Currently Amended) The audio signal processing method according to Claim 25, wherein

said step of generating a single information change is performed using only a last one of said information elements presented within said prescribed unit of time unit.

Claim 27. (Currently Amended) The audio signal processing method according to Claim 25, wherein

said step of generating a single information change is performed using only a first one of said information elements presented within said prescribed unit of time unit.

Claim 28. (Currently Amended) The audio signal processing method according to Claim 25, wherein

said step of generating a single information change ~~generation~~ is performed by ~~one of~~ adding and averaging said plurality of information elements within said prescribed unit of time unit.

Claim 29. (Currently Amended) The audio signal processing method according to Claim 25, wherein

said step of generating a single information change is performed by estimation based on said plurality of information elements within said prescribed unit of time ~~unit~~.

Claim 30. (Currently Amended) The audio signal processing method according to Claim 25, wherein

said step of generating a single information change is performed only for those information elements in said plurality of information elements within said prescribed unit of time ~~unit~~ ~~change~~ in which the change exceeds a prescribed threshold.

Claim 31. (Currently Amended) The audio signal processing method according to Claim 25, further comprising a step of imparting random fluctuations to said generated single information change.

Claim 32. (Currently Amended) The audio signal processing method according to Claim 25, wherein

said audio signals are digital signals, and said prescribed unit of time ~~unit~~ is an integral multiple of ~~the~~ a sampling period of said ~~audio~~ digital signals.

Claim 33. (Currently Amended) The audio signal processing method according to Claim 25, wherein

said prescribed unit of time ~~unit~~ is of variable length.

Claim 34. (Currently Amended) The audio signal processing method according to Claim 25, wherein

when there is no change in said information within said time unit, said step of performing virtual acoustic image localization processing is performed based on said single information change applied to an immediately preceding prescribed unit of time ~~unit~~.

Claim 35. (Currently Amended) The audio signal processing method according to Claim 25, wherein

when there is no change in said information within said prescribed unit of time ~~unit~~, said single information change applied to said virtual acoustic image localization processing is not transmitted.

Claim 36. (Original) The audio signal processing method according to Claim 25, wherein

said information possessed by said audio signals can be modified according to user operations.

Claim 37. (Currently Amended) An audio signal processing apparatus, comprising

an audio signal processing unit for performing virtual acoustic image localization processing of audio signals based on at least one information type among position information, movement information, and localization information thereon; and

information change generation means for generating, when a plurality of changes are made to said information within a prescribed time unit, one information change within said prescribed time unit based on said plurality of information changes, wherein

said audio processing unit is controlled, based on the one information change generated by said information change generation means, to perform virtual acoustic image localization processing of said audio signals.

Claim 38. (Currently Amended) An audio signal processing apparatus, comprising:

an audio processing unit for performing virtual acoustic image localization processing of audio signals, having at least one type of information among position information, movement information, and localization information, associated with time information and/or event information, based on said information; and

information change generation means for generating, when there are a plurality of said information changes within a prescribed time unit, one information change at the end of said prescribed

time unit based on said plurality of information changes, wherein said audio processing unit is controlled, based on the one information change generated by said information change generation means, to perform virtual acoustic image localization processing of said audio signals.

Claim 39. (Currently Amended) An audio signal processing apparatus, comprising:

an information change generation means for generating, when a plurality of changes in at least one type of information for audio signals among position information, movement information, and localization information are requested within a prescribed time unit, one information change at the end of said prescribed time unit based on ~~this~~ said plurality of information changes; and

storage means ~~in which are stored~~ for storing a plurality of synthesized audio signals obtained from ~~the localized~~ localization processing, wherein

virtual acoustic image localization processing is performed in advance on said audio signals based on a plurality of localization positions of the audio signals, and based on ~~an~~ said one information change generated by said information change generation means, from said storage means in which are stored ~~a~~ the plurality of synthesized audio signals obtained from this localization

processing, at least one of said plurality of synthesized audio signals ~~are~~ is read out and reproduced.